

CLAIMS

1. A system for reading a magnetic medium having several tracks of data which can be read in parallel, and comprising a detection device having at least as many detectors as there are tracks, making it possible to read simultaneously and at regular intervals a sample of data on each track, said detection device having a parallel/ series shift register receiving in parallel the samples of data read by the detectors at each read time and retransmitting them in series form, characterized in that it comprises:
- ♦ a processing circuit (M1) receiving each sample of data (x_i) to be processed from each track, together with the sample ($x_{(i-1)}$) of a first adjacent track and the sample ($x_{(i+1)}$) of a second adjacent track, and calculating the cross-talk affecting the sample of data to be processed due to the adjacent tracks;
 - ♦ an integration circuit (I1) receiving the cross-talk value thus calculated, integrating said values obtained at each read time, then integrating the values obtained at following read times;
 - ♦ a relative track-following control circuit (CR) receiving the result of integration of the integrator circuit (I1) and supplying a track-following control signal for the detection device.
- said processing circuit comprising means making it possible to multiply the value of the sample to be processed:
- by +1 when the sample of the first adjacent track is negative and the sample of the second adjacent track is positive;
 - by -1 when the sample of the first adjacent track is positive and the sample of the second adjacent track is negative;

10019277-010202

- by 0 when the samples of the adjacent tracks are of the same sign.

2. The system as claimed in claim 1, characterized in
5 that the data medium is read using a light beam
which is transmitted to the detection device after
reading the data medium, and in that the relative
track-following control circuit (CR) makes it
10 possible to control a device for deflecting the
light beam depending on the position of the
detection device.
3. The system as claimed in claim 1, characterized in
15 that the detection device comprises a greater
number of detectors than there are tracks to read
and in that it comprises:
 - an absolute position detection circuit (CTA)
making it possible to identify the track read
by each detector of the detection device;
 - 20 - a central control circuit (CC) controlling
the operation of said processing circuit (M1)
of said integration circuit (I1) and of said
relative track-following control circuit
(CR), then of the absolute position detection
25 circuit.
4. The system as claimed in claim 3, characterized in
30 that it comprises means for identifying, in the
data read by each detector, one or more track
identity data items.
5. The system as claimed in claim 4, characterized in
35 that the tracks of the data medium comprise
preamble zones containing said identification
data.
6. The system as claimed in claim 5, characterized in
that the preamble zones of the various tracks can
be read simultaneously.

1001927.010202

7. The system as claimed in claim 6, characterized in that the preamble zones have components which are positive or negative depending on the tracks and in that a circuit makes it possible to detect the tracks with positive continuous components and those with negative continuous components.
8. The system as claimed in claim 7, characterized in that the tracks of the recording medium are distributed in alternating groups of positive and negative components.
9. The system as claimed in claim 8, characterized in that it comprises groups of four tracks of positive components which alternate with groups of four tracks of negative components and in that it comprises:
- a first summation circuit (S1) adding the signs of the samples detected by a first group of four detectors (b0 to b3) and the inverse of the signs detected by a second group of four detectors (b4 to b7);
 - a second addition circuit (S2) adding the signs of the samples detected by the first two detectors of the first group of detectors and the last two detectors of the second group and the inverse of the signs of the samples detected by the other detectors of these groups of detectors;
 - a table indicating the numbers of the tracks detected by said detectors according to the results of the additions carried out by the addition circuits.
10. A recording medium comprising several tracks recordable in parallel, each one comprising a preamble zone recorded or recordable in parallel, said zones containing data making it possible to

1001927.010202

35

130

5 locate the tracks one with respect to the others,
characterized in that the preamble zones contain
data with (nonzero continuous components,) the
tracks being distributed in groups of tracks
containing data with positive continuous
components which alternate with groups of tracks
with negative continuous components.

1001927.010202